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I was born the oldest of four daughters in Brooklyn, NY. However, I am particularly proud of my heritage which has roots in the Caribbean islands of St. Croix, Barbados and Montserrat. I spent my childhood growing up in the Bedford Styvesant neighborhood; specifically, the Roosevelt projects on Dekalb Avenue. I was bussed to the elementary school, P.S. 199 in Brooklyn. I first realized I had an aptitude for Mathematics and Science during my attendance of Marine Park JHS; there I was the only black student enrolled in the Special Progress program. In my senior year of JHS, I won 2nd place in the Science Fair and scored in the 90's on all my regent and citywide exams. I graduated with high honors and was a member of: the school band, the girls' basketball team, the science club and the honors club. I passed the exams for all of New York's Technical High Schools: the Bronx School of Science, Styvesant and Brooklyn Technical. But instead of attending those schools, I moved to Cambridge, MA to live with my grandparents and attended high school at the Cambridge School of Weston. I played basketball and softball in high school and in the Cambridge Recreation Leagues. The summer following my junior year of HS, I was participated in the UNITE (now called MITE) Program. During one of the field trips that summer, I visited an Air Force Base in NH. There I was able to sit in the control tower and fly in a flight simulator (I received a pilots score). UNITE was extremely instrumental in my consideration of career choices. It led me to the decision of entering the Aerospace field. During my last year of HS, I volunteered as a Physical Education Teacher for several of the Cambridge elementary schools. Today, I still enjoy playing football, basketball, softball, skiing, cycling and tennis. On weekends, I often travel to softball tournaments, and I play Co-ed Flag football. Also, I have taken a scuba diving class.

After graduating from high school with honors I entered college at Massachusetts Institute of Technology (MIT) where I received my Bachelor of Science in Aeronautical/Astronautical Engineering. During my undergraduate years at MIT, I was involved with several projects that were geared toward manned space flight. These projects involved working with: a) the Applied Physics Laboratory - developed a fiber optic laser gyroscope, b) the Space Systems Laboratory - created a database for EVA neutral buoyancy activities performed at NASA Johnson Space Center, and c) Senior Project - Manned Mars Mission crew systems specialist for interplanetary vehicle. These projects generated a strong desire to participate in manned space missions. With this in mind, I have applied for NASA's astronaut program. Initially, I had been placed on a medical review for asthma. Since then I received a prescreening medical application and several of my references were contacted. Unfortunately, candidate selection has been placed on hold until this year.

When I graduated from MIT that was the year of the Shuttle disaster, all the jobs offered in Aerospace Engineering were for strategic defense. Ronald Reagan had this big scheme that missiles would protect the U.S. that would mean my future job could require me to develop missiles. It is extremely important to me that the projects I work on are not destructive. As a result upon completion of my education at MIT, I was encouraged by my best friend, Melva Bradford Warner to return to school. I choose to attend her alma mater, Howard University (HU) in Washington, DC as a graduate student in the Large Space Structures Institute. There I obtained a Masters of Engineering and Ph.D. in Mechanical Engineering, Aerospace option. My Ph.D. research objective at HU were to develop practical design procedures that can be used in conjunction with optimal digital controllers for future orbiting large space structure systems like the Space Station. As a student at HU, I was extremely fortunate. My education was funded by many fellowship and grants: NASA GSFC COOP, HU Terminal Dissertation Year, NASA Center for Studies of Terrestrial & Extra Terrestrial Atmospheres, Wright Patterson Air Force Laboratories and Dorothy Danford Compton Dissertation, NASA DC Space Grant Consortium, Patricia Roberts Harris, and Pacific Telesis Foundation. During graduate school, I participated in some really cool summer programs: SIECA and NASA Space Academy. My research at HU allowed me to travel to Germany, Canada, England, and throughout the US to present technical papers. During my travels, I won several student paper competitions; the last one being the most prestigious was the "6th International Space Conference for Pacific-Basin Societies" where I won 1st place for the Ph.D. student competition.

The majority of my NASA career has been spent as an aerospace engineer at the NASA GSFC in the Guidance Navigation & Control Center. I spent 3 years working on a MDEX project called MAP-Microwave Anisotropy Probe. It was successfully launched on June 30, 2001. My engineering responsibilities as an attitude control systems analyst included (but were not limited to) stability analysis and dynamic-structural simulation, development, simulation, analysis and software testing of the attitude determination and Kalman Filter routines and requirements, Thruster and Inertial operation modes, analysis of the environmental disturbances, and actuator sizing. Prior to MAP, I performed the initial analysis for actuator sizing and a feasibility study for a New Millennium microsat project, Colibri. I found this mission extremely exciting because it will implement new technologies as well as, innovative guidance, navigation and control techniques, (e.g., Global Positioning System (GPS)) for a miniature system. In the past, I have worked on three

other satellite projects: XTE-X-Ray Timing Explorer, TRMM-Tropical Rain Forest Measurement Mission and TRACE-Transition Region & Coronal Explorer. For these missions, I have either developed or utilized dynamic modeling simulation programs. These programs are invaluable in predetermining the dynamics and structural reactions of the spacecraft. I have also utilized the simulation software to design a combining filter (low & high pass filter) to control the Pitch axis better than the project TRACE's implemented Kalman filter.

After MAP, I spent a year working in the Integrated Mission Design Center (IMDC). The IMDC is a high paced quick turn around environment. In this facility in one 4-day week, a team of engineers from various disciplines, work together to design or enhance a spacecraft project scenario. The team studies and presents on the various aspects and tradeoffs of the mission. The disciplines include: Structural & Mechanical; Instrument Interface; Power & Electrical; Flight Dynamics (Orbit determination); Guidance, Navigation & Control; Thermal; Propulsion; Communications; Mission Assurance & Reliability; Command & Data, Handling; Ground Systems & Operations; Launch Vehicle Systems; and, Resources & Cost Estimating. My work as lead engineer for the Attitude Control Systems group required: determining the spacecraft operation modes; calculation of the environmental disturbances; actuator and sensor sizing; stability and dynamic-structural analysis; power, mass and cost budgets; simulation and feasibility studies; and, development of control algorithms.

In September of 2001, I was detailed for 11 months at NASA Headquarters under Mary Cleave, Deputy Administrator for Code Y, Earth Science Enterprise (ESE). She is a former astronaut/scientist who managed the SeaWiFS project at GSFC. I was assigned to Code YF, the ESE Program Planning and Development Division and matrixed to work jointly with Code YS, the ESE Science Division. I worked on a couple of projects and spacecraft missions. One task, I was to help redesign our science data products distribution -EOSDIS to SEEDS- which will be implemented for the Next Phase POESS (NPP) project. (EOSDIS is the current data network that has been set up to distribute data to the various science communities, agencies and international partners.) In addition, I was the Program Executive for the Ice, Cloud, & Elevation Satellite (ICESat) and Solar Radiation and Climate Experiment (SORCE) missions. As P.E., I offered solutions to problems that may arise as the project works towards launch and acted as liaison between NASA Headquarters management and NASA Center spacecraft/instrument group. Also, I was a member of the ESE: Outreach Policy group, Safety team and Visions Strategy Team.

Upon my return to GSFC, I was detailed to the Instrument Systems Branch as the Proposal and Instrument Manager for the Advanced X-Ray Polarimeter (AXP) mission. During that assignment, I led a team of scientist and engineers in writing a proposal for a small -Space Science- explorer (SMEX) that will cost little more than \$120M. From that proposal effort, the AXP team was unexpectedly awarded technology development funds of \$500K+. After completing the AXP proposal, I began working as an Instrument Manager (IM) for the NIRSpec Detector System on the James Webb Space Telescope (JWST). This telescope will improve upon the current capabilities of Hubble Space Telescope. This instrument subsystem has a budget of ~\$30M of a \$2B budget for JWST. Most recently I was the telescope manager on another SMEX proposal effort, Jupiter Magnetospheric Explorer (JMEX). For the JMEX effort we received \$450K for trade studies but we were not selected to continue into the build phase. Last year I did a 4 month detail at NASA

HQs in the Science Directorate as a Program Analyst; during that assignment I worked on the 2006 Science budget reporting project. When I returned to GSFC, I was the instrument/proposal manager for a new “Living with a Star” (LWS) instrument development called Vector ElectroDynamics Investigation (VEDI) and the Terrestrial Planet Finder (TPF) Coronagraph Instrument Concept Study called CorSpec. We were able to win \$250K for a Concept Study Report for CorSpec. Most recently, I was the IM for a “Living with a Star” mission, MMS SMART Fast Plasma Instrument (FPI), which will involve 4 spacecraft flying in a configuration at various altitudes in the tail of the solar magnetosphere that interacts with the Earth’s environment. I managed the components being built at GSFC and the management liaison for similar components being built by our Japanese partners. I collaborated as the IM for a “Mars Scout” proposal called “SCIM”, a proposed sample and return mission to Mars. Specifically, I am the manager for the Dust collector Experiment (DuCE) which will sterilize and stows the aerogel trapped dust particles from the Martian lower atmosphere into the sample return capsule which deliver the samples to Earth. Currently, I am a Loaned Executive to the Combine Federal Campaign for the National Capital Area. In this capacity I facilitate, monitor, train, delegate and inspire Federal Agencies and their employees to give to non-profit charities and agencies. I am responsible for ~\$2M in donations.

Each year, I have been an Adjunct Professor at local universities in the Washington, DC metropolitan area. Currently, I am teaching “System Dynamics and Control Theory” at HU in the Department of Mechanical Engineering. I have also taught “Automatic Controls” and “Vibrations Analysis” at HU. In the past, I have taught various mathematics classes at Bowie State University (BSU). During my tenure at BSU I was contracted to help improve their engineering curriculum. I designed two new courses for the freshmen and sophomore students to help students’ transition into their new engineering curriculum; they were: a professional engineering overview seminar and an engineering design course. The exposure to professionals in a seminar environment would allow them to view the various engineering disciplines of the prior to attending a secondary college to complete their engineering degrees.

I feel obligated to help spur the interest of minorities and females in the math, science and engineering disciplines; without diversity in all fields the United States will not remain technically competitive. Therefore, I am a member of the NASA GSFC Speakers Bureau and the Women of NASA Group and I have been Aerospace-Rocketry-Mechanical-Engineering-Professor-Computer Instructor-Career Advisor-Mentor and Friend for many students. Currently, I am teaching and Aerospace Club to 6th graders at HU Public Charter School of Math & Science (MS)². I work with students of all age groups; I feel it is important to create an early mathematical and/or scientific interest in young people and maintain it through out their later years. In addition, I have also created an email pipeline for under-represented groups in the technology fields to distribute the announcements for federal grants, internships and employment. As a proposal and application reviewer for NASA GSFC and Headquarters programs, I try to ensure that there is a fair review of all applicants regardless of race or gender.

For my future, I have several career paths in mind, they are: a mission specialist for the astronaut program; an academian at a university; and an advisor or liaison to the White House for Science, Technology and Education Policies. My experiences continue to grow and expand. My HU experience expanded my ability to carry out a full-fledged engineering research projects and provided me with leadership opportunities in university politics. My NASA GSFC experience extended my knowledge of current engineering control techniques, implementation of innovative ideas, as well as, gained hands on training in spacecraft design, management, and implementation. My NASA HQs experience afforded me the ability to manage and the understand policy associated with aerospace programs. Utilizing my training, I want to develop a satellite research center(s) at Historically Black Colleges or Universities (HBCU); students could build and design microsats for piggyback payload or formation flying type space missions. Once I have become an established academian, I plan to help create an Aerospace Research Center at an HBCU. I will offer administrative, teaching, education and technology policy experience to any of these career choices by utilizing my past exposure as the Graduate Student Council President, HU Presidential appointed committees, NASA GSFC committees, NTA committees, review boards, University professor, Harvard/Radcliffe researcher, and White House technical forums attendee. My most recent duties include member of: HU Board of Trustees, and Board of Directors for the HU Public Charter Middle School of Math and Science, Forestville Military Academy, and SECME

Over the years I have received numerous awards, here are a few of them. In 1996 and 1997, I was acknowledged by the National Technical Association, for being amongst the Top 50 minority women in Science and Engineering. In 1997, I received The "Women in Science and Engineering" award for being the best female engineer in the Federal Government that year. In 1998, I received a Special Recognition Award at the Black Engineers Award Conference. I have received four NASA awards, they are: 1998-NASA Goddard Honor Award for Excellence in Outreach, 1998-Center of Excellence Award for the TRMM Project, 1999-Customer Service Excellence Award for MAP Flight Software, and 2002- NASA Exceptional Achievement Award for Her Outreach efforts. I also received a "1999 Federal Career Award" from The Federal Executive Board of Excellence of Maryland, a "Topp's Africa-Centered Award" from Bowie State University, and a "Centurion of Technology Award" at the Women's of Color Technology Awards Conference. In February of 2000, I received a "Giant in Science Award" from The Quality Education for Minorities Network: Mathematics, Science and Engineering and a NASA Customer Service Excellence Award for MAP Flight Software. April 1, 2001, I received an award from the Marketing, Opportunities in Business & Entertainment Conference for being and Innovator in Internet Technology. In December of 2001, I received an honorary Doctor of Science from Medgar Evers College in Brooklyn, NY. In 2002, I received a HU College of Engineering, Architecture, & Computer Science Alumni Excellence Award and several NASA Awards; one was for Exceptional Achievement in Outreach. In 2006, I was honored by NASA GSFC with an Excellence Award in Outreach, by the Bessie Coleman Foundation for my achievements and inspiration to youth to follow Aerospace related careers and Women of Color Technology Professional Achievement Award. I have been featured: by NBC Nightly News in their series, "Women to Watch"; by TechTV in their program, "Screen Saver"; by iVillage.com as a "Women Who Rules"; by ScienceMaster.com; in Essence magazine in the article, "You done good girl"; in Jet; in Yahoo Internet Life magazine in the article, "America Uses the Net"; in Howard University magazine; in Emerging Markets magazine; in Biography Journal; in Caribbean Life

magazine; in Rolling Out magazine; and by thetechmag.com. I am also profiled in two history books, “African American Women Scientists and Inventors” and “Distinguished African Americans in Aviation and Space Science”; additionally, I am quoted in a new Technical writing textbook, a H.S. Physics book and in the Sally Ride’s Science Engineering book series.

I am proud to be the first (African American) female to receive a Ph.D. in Mechanical Engineering from HU; the first American to receive a Ph.D. in Mechanical Engineering, the Aerospace option from HU; and the first African American female to receive a Ph.D. in Engineering at NASA GSFC.

